AMENDMENTS TO THE CLAIMS:

Claim 1. (Currently Amended) A method of assessing a sensory nervous system of a subject, including:

simultaneously presenting two or more parts of the sensory system with respective sequences of spatially sparse stimuli using a stimulator,

varying using a processor each sequence over time between a null stimulus and one or more less frequent non-null stimuli,

controlling using said processor the variation of each sequence of spatially sparse stimuli so that neighbouring parts of the sensory system are less likely to receive simultaneous non-null stimuli rendering the stimuli spatially sparse,

measuring using a monitor each of one or more simultaneous responses by the subject to the sequences of spatially sparse stimuli, and

determining using said processor weight functions from the simultaneous responses for assessment of the sensory system.

Claim 2. (Previously Presented) The method according to claim 1, wherein the non-null stimuli appear in each sequence at a rate of about 0.25 to 25 per second.

Claim 3. (Previously Presented) The method according to claim 1, wherein the probability of neighbouring parts in the sensory system having simultaneous non-null stimuli is zero.

Claim 4. (Previously Presented) The method according to claim 1, wherein the sensory system is a visual system and multiple parts of a retina are presented with spatially sparse stimuli.

Claim 5. (Previously Presented) The method according to claim 1, wherein the sensory system is a visual system and the sequences include either binocular or dichoptic stimuli.

Claim 6. (Previously Presented) The method according to claim 1, wherein the sensory system is an aural or tactile system and the ears or skin are presented with spatially sparse stimuli.

Claim 7. (Previously Presented) The method according to claim 1, wherein the parts of the sensory system are selected from the group consisting of the retina, the ears, the skin, and the brain of the subject.

Claim 8. (Previously Presented) The method according to claim 1, wherein the spatially sparse stimuli are selected from a range of signals including light, sound frequency, and pressure.

Claim 9. (Previously Presented) The method according to claim 1, wherein the parts of the sensory system receiving spatially sparse stimuli form a region divided into

classes and only one of the classes has a non-zero probability of receiving stimuli at any time.

Claim 10. (Previously Presented) The method according to claim 1, wherein the responses are nonlinear and the weight functions are Wiener or Volterra kernels.

Claim 11. (Currently Amended) An apparatus for assessing a sensory nervous system of a subject, including:

a stimulator that simultaneously presents two or more parts of the sensory system with respective sequences of spatially sparse stimuli,

a monitor that measures each of one or more simultaneous responses by the subject to said sequences of spatially sparse stimuli, and

a processor adapted to:

vary each sequence over time between a null stimulus and one or more less probable non-null stimuli,

control the variation of each sequence of spatially sparse stimuli so that neighbouring parts of the sensory system are less likely to receive simultaneous non-null stimuli rendering the stimuli spatially sparse, and

determine weight functions from the responses for assessment of the sensory system.

Claim 12. (Cancelled)

Claim 13. (Previously Presented) The apparatus according to claim 11, wherein said monitor measures responses to said spatially sparse stimuli by way of electrode potentials on the head of the subject.

Claim 14. (Previously Presented) The apparatus according to claim 11, wherein the non-null stimuli appear in each sequence at a rate of about 0.25 to 25 per second.

Claim 15. (Previously Presented) The apparatus according to claim 11, wherein the probability of neighbouring parts in the sensory system having simultaneous non-null stimuli is zero.

Claim 16. (Previously Presented) The apparatus according to claim 11, wherein the sensory system is a visual system and multiple parts of a retina are presented with spatially sparse stimuli.

Claim 17. (Previously Presented) The apparatus according to claim 11, wherein the sensory system is a visual system and the sequences include either binocular or dichoptic stimuli.

Claim 18. (Previously Presented) The apparatus according to claim 11, wherein the sensory system is an aural or tactile system and the ears or skin are presented with spatially sparse stimuli.

Claim 19. (Previously Presented) The apparatus according to claim 11, wherein the parts of the sensory system are selected from the group consisting of the retina, the ears, the skin, and the brain of the subject.

Claim 20. (Previously Presented) The apparatus according to claim 11, wherein the spatially sparse stimuli are selected from a range of signals including light, sound frequency, and pressure.

Claim 21. (Previously Presented) The apparatus according to claim 11, wherein the parts of the sensory system receiving spatially sparse stimuli form a region divided into classes and only one of the classes has a non-zero probability of receiving stimuli at any time.

Claim 22. (Previously Presented) The apparatus according to claim 11, wherein the responses are nonlinear and the weight functions are Wiener or Volterra kernels.